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EXAMINER	
JACKSON, BLANE J	

ART UNIT	PAPER NUMBER
2685	10

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/806,034	NASSHAN ET AL.	
	Examiner	Art Unit	
	Blane J Jackson	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5,7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

RESPONSE TO AMENDMENT

Response to Arguments

1. The Office was not clear that the objection to the Specification was to be found in the Preliminary Amendment and readdressed below.

The office appreciates the applicant's clarification of the claimed invention such that all elements of the subsystem include means that independently organize the distribution of system resources where this is performed by means of an algorithm carried out at the base station, the intermediate stations and mobile stations. However, the distinction of what "the elements of the subsystem" is not clear in the claim language of claim 1. The Office maintains that Shaughnessy discloses a smart repeater capable of independent channel control and allocation. This is also the basis for the rejection for claims 21-28. Also a Resource Manager, maintained by one of the repeaters, column 8, lines 18-25, tests for the functionality of the repeater(s) but does not govern the functional decisions of each smart repeater (column 6, line 60 to column 7, line 1 and a plurality of repeaters: column 7, lines 1-16 and column 8, lines 36-53). Consequently, claims 1-20 are rejected under 35 USC 112 below.

Specification

2. The disclosure of the Preliminary Amendment received 05/24/03 is objected to because of the following informalities: page 5, line 5 refers to a "Time Frequency Division Duplex" which the examiner presumes to mean Time Division Duplex (TDD).

Appropriate correction/ clarification is required.

Claim Rejections - 35 USC § 112

3. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, it is unclear to what are "the elements of the subsystem" and how many of "the elements of the subsystem" have means to automatically organize the splitting of system resources. It is suggested the claim language is revised from "wherein the elements of the subsystem have means which automatically organize the splitting of system resources between the fixed home station, the at least one repeater station and the at least one mobile station" to read "wherein each of the individual fixed home base station, at least one repeater station and at least one mobile station all have means which automatically organize the splitting of system resources between the fixed home base station, at least repeater station or at least one mobile station". As determined from claim 21, the following rejection of claims 1-20 is structured to admit the repeater(s) as "the elements of the subsystem" to automatically organize the splitting of system resources between the fixed home base station, at least one repeater station and the at lest one mobile station.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6, 9, 10, 12-14, 17-21 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohm (U.S. Patent 5,133,001) with a view to Shaughnessy et al. (U.S. Patent 5,392,449).

As to claims 1 and 2, Bohm teaches an in-house subsystem in at least one of a mobile radio network and a wired communication network including:

A fixed home base station,

A least one repeater station,

At least one mobile station and,

At least one transmission/reception antenna for connection either to the at least one mobile station or to the at least one repeater station (figure 1, exhibits a private branch exchange (12) including a base unit (26), repeater (27) and wireless link between the repeater and subscriber unit (28), column 3, lines 33-61),

The fixed home base station having at least one connection means to an external telecommunication network and at least one transmission/reception antenna for internal connection to the at least one repeater station (figure 1, central unit 26 is the base station, column 3, line 62 to column 4, line 16),

The at least one repeater station having at least one connection element for connection either to one of the home base station or to another repeater station, and,

The at least one mobile station having one of the transmission/reception antennas for communication with at least one of the mobile radio network or with a

repeater station (figure 1 shows wireless links between the base station (26), the Radio Link Bus or repeater (27 and Subscriber unit (28)),

Bohm does not teach wherein the elements of the subsystem have means which automatically organize the splitting of system resources between the fixed home base station, the at least one repeater station and the at least one mobile station.

Shaughnessy teaches a wireless telephone system where the resource management is controlled by one or a plurality of smart repeaters that have the means to automatically organize the splitting of system resources between the fixed home base station, the at least one repeater station and the at least one mobile station (each intelligent repeater may be capable of performing each component of the call establishment process including authorizing access and determining the required resources and connecting the resources, column 6, line 60 to column 7, line 16. Note the role of the resource manager is to monitor and establish capable functions within the repeater(s) but where the independent functions of resource management, connecting the resources is carried out by the intelligent repeater(s), column 8, lines 36-53).

As to claim 3, Bohm teaches connection means in the fixed home base station is a transmission reception unit for wireless communication with at least one of the mobile radio network or the wired connection to a landline telecommunication network (figure 3, column 3, line 62 to column 4, line 16).

As to claim 4, Bohm teaches one connection element in the repeater station (figure 1, (27)) is at least one of the transmission/ reception antenna (wireless) or a cable connection (column 4, lines 49-58).

As to claim 5, Bohm teaches, for at least one connection, the communication from the fixed home base station to the mobile station is routed via at least one repeater station (column 1, lines 48-57, the transmitter/ receiver unit is a repeater).

As to claim 6, Bohm teaches the subsystem resources split among one another include at least different frequencies (more than one carrier frequency pair-column 5, lines 34-43).

As to claim 7, Bohm teaches a TDMA signal format where the assigned system resources split among one another include at least different timeslots (column 2, lines 8-11 and column 5, lines 24-33, figure 6).

As to claims 9 and 10, Bohm is silent as to a wireless subsystem with personal identification numbers and means for the repeater/ fixed home base station to distinguish access authorization for mobile stations. Shaughnessy teaches an intelligent repeater scans a list stored in memory and comparing the ID of the communication unit sourcing the resource request to determine authorization for the requested communication resource (figure 3, column 4, lines 35-68). The networked

system of Shaughnessy would necessarily use an identification protocol between the linked repeaters/base stations in order to process calls between selected repeaters with selected capabilities (column 5, lines 25 to column 6, line 15). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the combination of Bohm and Shaughnessy with the subscriber authorization checks performed by the system of Shaughnessy to implement a system with decentralized control and eliminate non-authorized subscriber access to the wireless system.

As to claims 17-20, Bohm teaches a private branch exchange connected to the central office channel equipment (figures 1 and 3, terminal A) for public radio communication and a second landline connection (terminal B) to trunk equipment for call transfer (figure 3, column 3, lines 62 column 4, line 2. Bohm is silent at to whether the subsystem landline network connection is associated with ISDS, PSTN or a Digital Subscriber Line/Asymmetric Digital Subscriber Line network.

Shaughnessy teaches an intelligent repeater with base station capabilities to include three communication interfaces where the content of the information and the configuration of the external networks determine to which interface the information is routed where a public interface (109, figure 1) may be a standard telephone subscriber loop line or a standard data network line column 3, lines 10-35). Therefore, it would have been obvious to one of ordinary skill in the art to modify the landline port of Bohm with a standard interface as taught by Shaughnessy for compatibility with an external network.

As to claim 21, Bohm teaches a method for communication in a subsystem of at least one of a mobile network and a wired communication network, the subsystem comprising: a home base station, at least one repeater station and at least one mobile station (figures 1-44, Central Unit (26)-a base station, Radio Link (27)-repeater station (27) and Subscriber unit (28)-mobile station),

Where the home base station maintains a connection to at least one of a mobile radio network and a landline network (column 3, line 62 to column 4, line 2), and

Forwards the connection to the at least one mobile station using the at least one repeater station (a TDMA system where the transmitter/ receiver units (repeaters) are controllable from the central (base) unit with respect to carrier frequency, channel number and/ or transmitting power, column 2, lines 3-12) but does not teach the elements of the subsystem have means which automatically organize the splitting of system resources between the fixed home base station, the at least one repeater station and the at least one mobile station.

Shaughnessy teaches a decentralized communication resource management shared by a trunked TDM network of intelligent repeaters (figures 1 and 2) for automatically splitting the system resources of the intermediate connections between a mobile station, repeater and a repeater with base station abilities, connection to an external telephone network (column 2, line 15-46). Shaughnessy further teaches each intelligent repeater may be capable of performing each component of the call establishment process, trunked connection to a public telephone system and on or off

site connections and performing all functions working alone or sharing part or a few functions of a base or repeater station working individually, in pairs or a larger network as determined by the geographical layout of the application (column 6, line 60 to column 7, line 9 and column 3, lines 16-68). It would have been obvious to one skilled in the art at the time of the invention to modify the centralized control structure of Bohm with the decentralized control scheme of Shaughnessy to eliminate the dependence on a single shared device for system control.

As to claims 23 and 24, Bohm teaches a home radiotelephone system that uses centralized call control and a single or a chain of repeaters to connect the base station with one or a plurality of mobile terminals (figure 1, column 1, line 43 to column 2, line 7) but does not teach where the mobile station or home base station which initiates the logical connection setup starts the automatic use of the resources between itself and the next connection element in the logical connection chain and if there are one or more repeater stations in the logical line of connection, the respective repeater station performs channel setup for the next element including automatic resource use.

Shaughnessy teaches resource management by a single or chain of intelligent repeaters each capable of performing a portion or all elements of the call establishment process when initiated by a base station (a repeater with base station landline interface capability) or mobile telephone (column 5, line 25 to column 7, line 6). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the central control system of Bohm with the decentralized approach of Shaughnessy with

intelligent repeaters as taught by Shaughnessy to provide non stop system operation in the event that one of the intelligent repeaters suffers a partial or complete failure.

As to claim 25, Bohm teaches a TDMA cordless telephone system with a central unit (figure 1, (26) that inherently transmits on a Broadcast Control Channel resource information to a mobile station initiating a connection. Bohm does not teach where the repeater station (27) transmits on a Broadcast Control Channel (BCC) a list of resources already used which cannot be used by the mobile station initiating a connection (column 2, lines 3-11).

Shaughnessy teaches a particular intelligent repeater at a site may be dedicated to transceiving control information to and from mobile telephones and is considered to provide the "control channel", a term well known in the art. Shaughnessy further teaches a mobile request for service on the control channel is passed to other intelligent repeaters for request authentication and resource allocation information (column 4, line 1-34). It would have been obvious to one skilled in the art at the time of the invention to modify the repeaters of Bohm with the intelligent repeater scheme of Shaughnessy to manage control channel information by the repeaters for decentralized control of repeaters repeater/base stations and mobile telephones for call control, call initiation and hand off.

As to claims 26 and 27, Bohm teaches a PBX with a central unit that functions like a base station (figure 1, (26)) with a connection ports to a public radio network or a

trunk line where the connection setup may be initiated from the landline network and/ or a mobile radio network incoming or connection setup is initiated by the subsystem (PBX figure 1) outgoing call (column 3, line 63 to column 4, line 2).

As to claim 28, Bohm teaches repeaters in a cordless telephone system but does not teach the subsystem (figure 1, (11) PBX) performs the connection transfer procedures between various repeater stations and/ or between a repeater station and the home base station. Shaughnessy teaches intelligent repeater that perform the connection transfer procedures between various repeater stations and/ or the home base station (a repeater configured with home base station capability) (column 6, line 60 to column 7, line 16). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the central control system of Bohm with the decentralized approach of Shaughnessy with intelligent repeaters as taught by Shaughnessy to provide non stop system operation in the event that one of the intelligent repeaters suffers a partial or complete failure.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohm (U.S. Patent 5,133,001) in combination with Shaughnessy et al. (U.S. Patent 5,392,449) and further in view of Akerberg et al. (U.S. Patent 5,533,027- hereafter Akerberg '027).

As to claims 7 and 11, Bohm modified teaches a radiotelephone subsystem is connected to the mobile radio network in the known manner using C-net or D-net (column 3, lines 10-15) and the connection in the subsystem is based on a Time

Division Multiplex mode. Bohm does not specifically teach a Frequency Division Duplex connection method to the radio network or a Time Division Duplex connection method within the subsystem.

Akerberg '027 teaches a local home radio communication subsystem similar to Bohm modified (less the repeater, figure 5) where the subsystem may utilize TDMA/TDD or TDMA/FDD for wireless external and internal access (column 9, lines 26-48). It would have been obvious to one skilled in the art at the time of the invention to further realize in the TDMA subsystem of Bohm and Shaughnessy the specific FDD or TDD signaling protocol of Akerberg '027 for a cordless telephone system operating standard that is cheap and efficient where TDMA/TDD is efficiently used in the Digital European Cordless Telecommunications (DECT) standard.

7. Claims 8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohm (U.S. Patent 5,133,001) in combination with Shaughnessy et al. (U.S. Patent 5,392,449) and further in view of Akerberg et al. (U.S. Patent 6,226,528).

As to claims 8 and 22, Bohm teaches cordless communication that uses TDMA transmission technique (column 2, lines 8-11) and Shaughnessy teaches repeater cellular system uses a frequency and/or time division multiplex format (column 2, lines 39-46) but Bohm and Shaughnessy do not teach where the subsystem resources split among one another include at least different Code Division Multiple Access Codes, the CDMA system.

Akerberg teaches cordless communication where DECT uses TDMA, CT2 works under FDMA for their transmission technique where CDMA is another digital access technique which is available for cordless communication (column 1, lines 9-40). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the combination of Bohm and Shaughnessy with an access technique as taught by Akerberg whereas the selection of each depends on the applicable region where CDMA techniques would be the popular digital application in North America.

8. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohm (U.S. Patent 5,133,001) in combination with Shaughnessy et al. (U.S. Patent 5,392,449) and further in view of Pillekamp et al. (U.S. Patent 6,535,731).

As to claims 15 and 16, Bohm modified does not teach a cordless communication subsystem associated with a Global System for Mobile Communications (GSM) or Universal Mobile Telecommunications system (UMTS) network. Pillekamp teaches a universal mobile telecommunication system that combines the elements of radio mobile and cordless communication techniques (figures 3-8). Pillekamp further teaches where a subsystem (cordless Pico cell) is associated with GSM and UMTS networks as well as TDMA and CDMA (column 1 line 24 to column 2, line 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to further recognize the applicability of GSM and UMTS to Bohm modified as taught by Pillekamp for use in third generation integrated mobile cellular/cordless telecommunication systems.

Akerberg teaches TDMA, FDMA or CDMA access techniques for cordless communication. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the combination of Bohm and Shaughnessy with an access technique as taught by Akerberg whereas the selection of each depends on the applicable region where CDMA techniques would be the popular digital application in North America.

Conclusion

9. The information disclosure statement filed 10/19/01 (paper #7) fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it lacks a concise explanation of the relevance as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J Jackson whose telephone number is (703) 305-5291. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

BJJ

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